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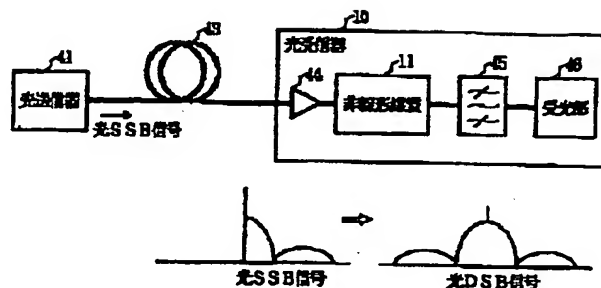
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TITLE : OPTICAL RECEIVER



ABSTRACT : PROBLEM TO BE SOLVED: To suppress eye aperture deterioration caused when an optical SSB signal is directly detected and to improve the reception sensitivity of the optical SSB signal by converting the optical SSB signal transmitted through an optical fiber transmission line to an optical DSB signal and receiving it.

SOLUTION: The optical receiver 10 is provided with a nonlinear medium 11 as a means converting the optical SSB signal to the optical DSB signal, and the nonlinear medium 11 is inserted between an optical amplifier 44 and an optical filter 45. The optical amplifier 44 amplifies the optical SSB signal until optical power causing a nonlinear effect (four light waves mixture) in the nonlinear medium 11, and the optical filter 45 band limits the optical SSB signal so as to remove a natural emission noise, etc., generated by the optical amplifier 44. When the optical SSB signal is propagated through the nonlinear medium 11, the four light waves mixture making an optical carrier a pump beam occurs, and a copy of a single side band wave is generated on a position symmetrical for the optical carrier, and the optical SSB signal is converted to the optical DSB signal. Moreover, self-phase modulation caused in the nonlinear medium 11 is used for converting from the optical SSB signal to the optical DSB signal also.

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